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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,994	08/04/2006	Tony Albrecht	5367-201PUS	1421

27799 7590 10/01/2007
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551 FIFTH AVENUE
SUITE 1210
NEW YORK, NY 10176

EXAMINER

STAFFORD, PATRICK

ART UNIT	PAPER NUMBER
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2828

MAIL DATE	DELIVERY MODE
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10/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,994	Applicant(s) ALBRECHT ET AL.	
	Examiner Patrick Stafford	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/26/2005 and 5/24/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, 8, 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang (U.S. Patent Application Publication 2002/0126720, hereafter '720).

Claim 1: '720 teaches a semiconductor laser, comprising:

at least one absorbing layer within the laser resonator (paragraph 19, lines 1-4 and Fig. 1, part 19), said absorbing layer reducing the transmission T_{Res} of the laser radiation in the laser resonator for the purpose of decreasing the sensitivity of the semiconductor laser to disturbances created by the radiation fed back into the laser resonator (paragraph 19, lines 9-13).

Claim 3: '720 teaches the semiconductor laser as claimed in claim 1, in which the reflectivity of the mirrors of the resonator and the transmission T_{Res} of the laser radiation during a resonator circulation are set so as to produce a low sensitivity to disturbances for a wide range of possible output powers of the semiconductor laser (paragraph 18).

Claim 4: '720 teaches the semiconductor laser as claimed in claim 1, in which the semiconductor laser is a single-mode laser (paragraph 15).

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Claim 5: '720 teaches the semiconductor laser as claimed in claim 1, in which the semiconductor laser is a surface emitting semiconductor laser (VCSEL) (paragraph 17, lines 1-2).

Claim 8: '720 teaches the semiconductor laser as claimed in claim 1, in which the absorbing layer is a gallium arsenide layer (paragraph 18, lines 1-4).

Claim 10: '720 teaches the semiconductor laser as claimed in claim 1, which contains a plurality of absorbing layers within the laser resonator (paragraph 19, lines 1-4 and Fig. 1, part 19, both sides of part 18).

Claim 11: '720 teaches the semiconductor laser as claimed in claim 5, which the surface emitting semiconductor laser contains a Bragg mirror and the absorbing layer is contained in said Bragg mirror (Fig. 1, part 16 "DBR" and part 19 "absorber" is in part 16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (U.S. Patent Application Publication 2002/0126720, hereafter '720) in view of Coldren et al (U.S. Patent Application Publication 2002/0071464, hereafter '464).

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Claim 2: '720 teaches the semiconductor laser as claimed in claim 1. It does not explicitly teach the absorbing layer (8) is situated in a node of a standing wave that forms during operation of the semiconductor laser in the laser resonator. However, '464 teaches an absorbing layer situated in a node of a standing wave that forms during operation of the semiconductor laser in the laser resonator (paragraph 16, lines 8-11) in order to reduce free carrier absorption. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made use an absorbing layer situated in a node of a standing wave that forms during operation of the semiconductor laser in the laser resonator in order to reduce free carrier absorption.

Claim 9: '720 teaches the semiconductor laser as claimed in claim 8. '720 does not explicitly teach the absorbing layer being approximately 20 nm thick. However, '464 teaches an absorbing layer being approximately 20 nm thick (paragraph 48, lines 15-18) in order to be thick enough to suppress higher order mode but not cause a significant absorption loss for the fundamental mode. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made use an absorbing layer being approximately 20 nm thick in order to be thick enough to suppress higher order mode but not cause a significant absorption loss for the fundamental mode.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (U.S. Patent Application Publication 2002/0126720, hereafter '720) in view of Raymond et al (U.S. Patent 6,393,038 hereafter '038).

Claim 6: '720 teaches the semiconductor laser as claimed in claim 1, in which the semiconductor laser is a surface emitting semiconductor laser (paragraph 17, lines 1-2).

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It does not explicitly teach the surface emitting semiconductor laser with an external resonator (VECSEL). However, '038 teaches a surface emitting semiconductor laser with an external resonator (VECSEL) with an absorption layer (col. 4, lines 55-65 and Fig. 1) in order to be used for high density optical data storage. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made use a surface emitting semiconductor laser with an external resonator (VECSEL) with an absorption layer in order to be used for high density optical data storage.

Claim 7: '720 and '038 teach the semiconductor laser as claimed in claim 6. '720 teaches the surface emitting semiconductor laser contains a Bragg mirror and the absorbing layer is contained in said Bragg mirror (Fig. 1, part 16 "DBR" and part 19 "absorber" is in part 16).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Stafford whose telephone number is (571) 270-1275. The examiner can normally be reached on M-Th 7:30-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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